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CHILDHOOD VERBAL VERSUS PHYSICAL AGGRESSION AND THE LONG-TERM REPERCUSSIONS ON ADULT PSYCHOPATHOLOGY

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Childhood Verbal Versus Physical Aggression and the Long-term Repercussions on Adult Psychopathology

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Report No. 02-05. The views expressed in this report are those of the author and do not reflect the official policy or position of the Department of the Navy, Department of Defense, or the U.S. Government. Approved for public release; distribution unlimited. This research has been conducted in compliance with all applicable federal regulations governing the protection of human subjects in research. The author acknowledges the contributions of the project sponsor, the Navy Family Advocacy Program, whose support made the study possible. Correspondence regarding this article should be addressed to Lex L. Merrill, Naval Health Research Center, P.O. Box 85122, San Diego, CA 92186-5122.

ABSTRACT

This thesis explored U.S. Navy recruits self-reported childhood verbal and physical aggression and the possible relationship to anxiety and depression in adulthood. In a cohort of 11,195 Navy recruits entering the Navy between 1996 and 1997, measures of aggression found that an average of 69% of the recruits reported they had experienced some level of physical aggression by their parents and 86% reported parental verbal aggression. Measures of clinical anxiety and depression revealed that 6% of the recruits reported anxiety above the clinical cut-off and 8% reported clinical depression. Finally, significant relationships were found between childhood physical aggression and adult anxiety for all recruits. However, childhood physical aggression was significant in predicting clinical depression for females only. A significant relationship was found between childhood verbal aggression and clinical depression when analyzing all recruits, but no significance was found when genders were analyzed separately. The implications of these findings are discussed.

INTRODUCTION

"It is possible that more subtle forms of aggression may impact a child's functioning in unseen ways...they may deeply scar a child, without a hint of visible wounds" - jj

Accounts of human aggression have existed since the beginning of recorded history. While aggression comes in many forms, much attention has been given in the past decades to the aggression that occurs within family systems. Until recently, parental physical and sexual abuse have received the most attention in family behavior research. Social scientists have researched and drawn many conclusions about the immediate and long-term negative consequences of childhood physical and sexual abuse. However, until about a decade ago, child psychological maltreatment remained overshadowed by these more recognized forms of aggression (Brassard, Hart, & Hardy, 1993; McGee & Wolfe, 1991).

Studies have shown the long-term negative consequences of child physical and sexual abuse, which include depression, anxiety, aggression and low self-esteem (Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Rosen & Martin, 1996). However, fewer studies have addressed the same potential dynamics of childhood psychological maltreatment. The studies that have examined childhood psychological maltreatment have found negative short- and long-term consequences such as higher rates of physical aggression, anxiety, depression, interpersonal problems, low self-esteem and low academic achievement in children and adolescents (Briere & Runtz, 1990; Ferguson & Dacey, 1997; Gross & Keller, 1992; Kent & Waller, 1998; Moeller, Bachmann, & Moeller, 1993; Rosen & Martin, 1996; Simons & Miller, 1987).

The current study is a secondary analysis based on longitudinal behavioral survey data collected from a sample of more than 12,000 male and female Navy recruits over a 2-year period. This report focuses on the recruits' responses to measures of childhood psychological and physical maltreatment, as well as the potential effects of the maltreatment on symptoms of anxiety and depression in adulthood.

LITERATURE REVIEW

Operational Definitions

One of the principal obstacles to studying childhood psychological maltreatment is the difficulty in creating an operational definition. The term "psychological maltreatment" is often used interchangeably with the terms "psychological aggression," "emotional aggression," "emotional maltreatment," "verbal aggression" and "verbal abuse" (Downs, Miller, Testa, & Panek, 1992; Kolko, Kazdin, & Day, 1996; Vissing, Straus, Gelles, & Harrop, 1991). In citing the work of others, this report will use the terms that were used by the original authors. However, this thesis focuses on verbal aggression as a subcategory of psychological maltreatment. Child psychological maltreatment is a multifaceted construct that consists of two basic subcategories: emotional aggression and emotional neglect. Emotional aggression includes verbal or emotional assault, close confinement, threatened harm, attempted or potential physical or sexual assault, or deliberate withholding of food, shelter or sleep. Emotional neglect includes inadequate nurturing/affection, chronic/extreme spouse aggression, permitted maladaptive behavior, refusal of psychological care, delay in psychological care, permitted drug and alcohol aggression, and overprotective restrictions that foster immaturity or emotional overdependence (Garbarino, Guttmann, & Seeley, 1986). Garbarino defined psychological aggression as an intentional attack by an adult on a child that affects his development in terms of his self and his social competence . The attack can consist of one or more of the five forms: rejecting, isolating, terrorizing, ignoring, and corrupting. One instrument developed to identify conceptually different forms of psychological maltreatment is the Psychological Maltreatment Rating Scales (PMRS) (Brassard et al., 1993). To develop the PMRS, the authors videotaped interactions of mother-child dyads in order to predict which families would need Child Protective Services (CPS) in the near future. The PMRS proved to have moderate reliability and validity and was a better predictor of CPS

referrals than were the mothers' personal resources and social support. The final list of categories that make up the PMRS are: Spurning (a type of verbal battering that is a combination of rejection and hostile degradation); Terrorizing (threatening to physically hurt, kill or abandon a child, threatening to hurt a child's loved ones or favorite things, exposing a child to violence, leaving a child unattended under threatening circumstances); Exploiting/Corrupting (modeling antisocial acts or condoning deviant behaviors); Denying Emotional Responsiveness (ignoring a child's attempts to interact, or reacting to a child in a mechanistic way devoid of verbal or physical affection), and Isolating (confining a child physically or socially, restricting movement such as being locked in a closet or forced to stay in a chair for long periods). Based on these five categories, many studies have used these operational definitions to measure forms of psychological maltreatment, several of which are cited in this report (Briere & Runtz, 1988a; Ferguson & Dacey, 1997; Gross & Keller, 1992).

In the past decade, a few studies began to focus on verbal aggression/abuse (Spurning according to the PMRS), one of the five forms of psychological maltreatment. Straus proposed a broader term called verbal/symbolic aggression and developed a subscale to assess this type of maltreatment as part of his Conflict Tactics Scales (CTS) (Straus, 1988). Verbal/symbolic aggression was defined as "a communication intended to cause psychological pain to another person, or a communication perceived as having that intent" (p. 8). Examples of verbal and nonverbal behavior include name calling, nasty remarks (active, verbal), slamming a door or smashing something (active, nonverbal), and stony silence or sulking (passive, nonverbal). Vissing and colleagues (1991) used the Verbal Aggression Subscale from the CTS in a study of parental verbal aggression. The authors elaborated on Straus's term verbal/symbolic aggression by saying that they believe nonverbal communication is vital to human interaction, including aggressive communications. They stated that the compound term of verbal/symbolic aggression is not necessary since symbolic aggression subsumes both verbal and nonverbal acts.

Physical aggression is also a multifaceted construct and is defined by the CTS according to 5 categories ranging from minor to very severe aggression (Straus, 1990b). However, for both verbal and physical aggression, it difficult to determine a definition that divides aggression from abuse. Straus explains in the CTS how aggression may be defined according to the social norms of a society according to where they decide to "draw the line" between aggression and abuse. In the United States, physical aggression is usually delineated by the severity of the assault, and the line is drawn for psychological aggression based on chronicity (Straus 1988, p.6). Straus pointed out that spanking or hitting a child with an object such as a hairbrush is not "abuse" according to the legal and informal standards of American society, although the same gestures are considered abusive in other countries.

Physical maltreatment has been well researched and shown to have numerous short and long-term adverse effects, including anger and aggression in adulthood (Briere & Runtz, 1990), psychological distress and depression in adolescence (Turner & Finkelhor, 1996), and Posttraumatic Stress Disorder (PTSD) when corporal punishment has been used (Finkelhor & Dziuba-Leatherman, 1994). Turner and Finkelhor (1996) also found that more frequent and severe forms of physical aggression were related to major depression. They noted gender differences in these outcomes: females experienced higher rates of depression than males as a result of physical punishment. According to the literature, childhood physical aggression often co-occurs with childhood psychological maltreatment (Ferguson & Dacey, 1997; Solomon & Serres, 1999). These studies suggest that childhood physical and emotional maltreatment can result in similar negative outcomes.

Further Background Studies

There has been a limited amount of research conducted on childhood psychological maltreatment, and very few studies have examined the repercussions of this form of childhood aggression in adulthood (Ferguson & Dacey, 1997; Kent & Waller, 1998; Rosen & Martin, 1996). The studies that have examined the relationships between different forms of aggression have indicated that the effects of childhood verbal aggression alone may be as, or more detrimental, to children than the effects of physical aggression alone. For example, researchers in a study developed the Childhood Experiences Questionnaire and surveyed 211 women health care providers about their childhood

aggression histories. Psychological maltreatment was defined according to the five categories of the PMRS (Brassard et al., 1993). After isolating those women who were psychologically abused only, the results showed that these women reported significantly greater trait anxiety, depression, and dissociative episodes than the control group or those physically abused only. They concluded that the impact of childhood psychological maltreatment alone is significant and can be as damaging as other forms of childhood aggression in terms of later symptoms (Ferguson & Dacey, 1997). In a study conducted on a large, nationally representative sample, a significant relationship was found between children reporting higher rates of parental verbal aggression and those exhibiting increased physical aggression, delinquency, and poor interpersonal relationships. The significant relationship that was found between verbal aggression and psychosocial problems applied to all age groups of children, both genders, and both low and high socioeconomic status. It was concluded that even children raised in homes without physical aggression still experience behavior problems (Vissing et al., 1991).

A further study focused on isolating the effects of parental verbal aggression from those of parental physical aggression, since the two often co-occur. Researchers surveyed 140 10-year-old children with the Children's Perception of Parental Verbal Aggression Scale, which measured both physical and verbal aggression. Verbal aggression scores were broken down into low and high groups. Significant differences were found between those children exposed to low and high verbal aggression on measures of social acceptance, scholastic competence, behavioral conduct, and global self-worth. It was concluded that verbal aggression alone, in the short term, might be detrimental to children's psychosocial development (Solomon & Serres, 1999).

Gross and Keller (1992) examined the long-term consequences of physical and psychological child aggression by administering the Child Aggression Questionnaire (CAQ) to 260 university students. The CAQ contains various retrospective measures of psychological maltreatment, including verbal aggression. They found that depression scores were higher for those subjects who reported both psychological and physical abuse than the nonabused group or those who reported either physical or psychological abuse only. However, psychological aggression was reported as a critical variable in predicting levels of depression, self-esteem, and attributional style, when controlling for physical aggression effects. By contrast, when controlling for psychological aggression, physical aggression alone did not significantly contribute to the variance in these variables. Therefore, the question remains to what extent the outcomes of these two forms of aggression are similar, and if there are differences between them in terms of their impact on anxiety and depression in adulthood.

Few studies have had an opportunity to examine large groups of young adults in terms of childhood aggression and later psychopathology, and many previous studies focused on women only (Briere & Runtz, 1988a; Downs et al., 1992; Ferguson & Dacey, 1997; Moeller et al., 1993). However, Rosen and Martin (1996) conducted a survey on 1,377 young male and female soldiers on active duty in the U.S. Army. Subjects took the Childhood Trauma Questionnaire which retrospectively measures childhood physical-emotional abuse (i.e., felt hated by a family member, violence resulting in medical attention), sexual abuse, emotional neglect, and physical neglect. Physical-emotional abuse produced the strongest effects on psychological symptoms, which included anxiety and depression. They also found that females were three times more likely to have suffered physical-emotional abuse and sexual abuse than males, and females also scored significantly higher in various psychological symptoms than males.

In a longitudinal survey conducted on the combined effects of various types of aggression on children, researchers found that when physical neglect and physical aggression were coupled with verbal aggression, children's self-images were more negatively affected than those who suffered physical aggression and neglect alone (Ney, 1987). As indicated in the literature, anxiety and depression in adulthood have been suggested as potential repercussions of childhood physical and psychological aggression. Childhood emotional and physical abuse were significantly related to anxiety and depression in a retrospective survey of 236 nonclinical women (Kent & Waller, 1998). However, there have been few direct comparisons of childhood verbal aggression and childhood

physical aggression and their later effects on adult symptoms of anxiety and depression (Rosen & Martin, 1996).

Examining these forms of childhood aggression and their effects on adult psychopathology is meaningful for any population. Ongoing studies are being conducted on a national level to ascertain the extent and effects of child abuse. The response to the outcomes of these studies has resulted in national efforts to improve the lives of children in a multitude of ways, such as social services, treatment centers, and programs for better parenting skills. The military has not been exempt from this effort, however, more could be done since the mental and physical readiness of military personnel is of utmost importance. It would be profitable to obtain and track recruits' physical and mental health in order to explore potential links with hospitalization and attrition rates. The results of establishing these links could be of considerable consequence to the military in terms of prevention and treatment. In addition, the potential repercussions on recruit retention and overall health care costs could be of equal significance to the military.

The outcomes of the current study will serve to support or reject the claim of whether childhood verbal aggression may be as detrimental to later mental functioning as childhood physical aggression. It will also compare the differences of the effects of maltreatment on gender. Although some studies have examined these issues, such a study has not been conducted on a large, cross-sectional sample of young men and women. The results may offer a further contribution to the body of research on child discipline in civilian and military families.

Goals of the Present Study

1. To measure the rates of childhood physical and verbal aggression reported retrospectively in a large cross-section of young adults and examine their relationship to clinical anxiety and depression, in comparison with participants who did not report childhood aggression.
2. To examine whether the long-term sequelae of parental verbal aggression may have an equally significant effect on anxiety and depression when compared with parental physical aggression.

HYPOTHESES

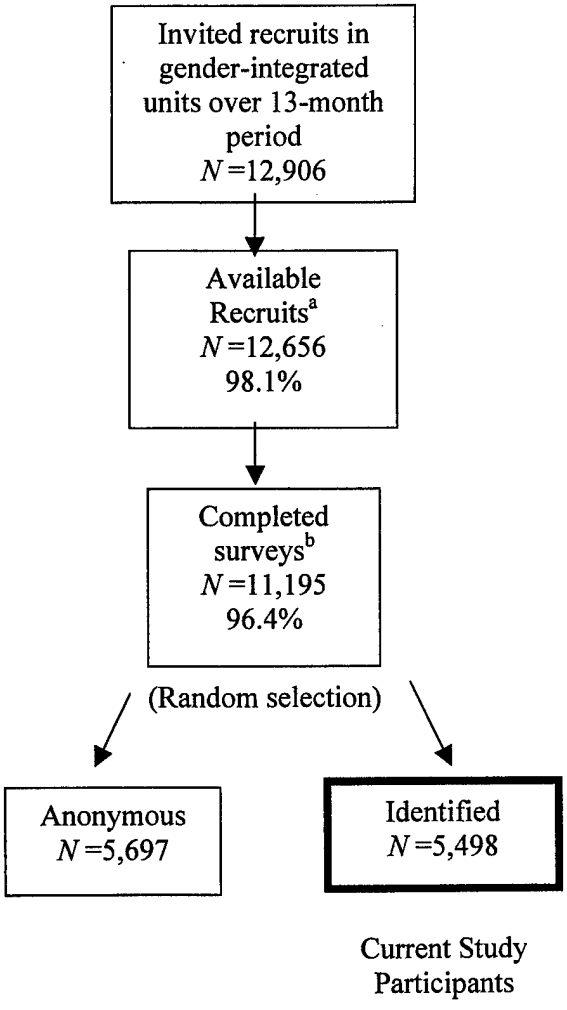
1. Recruits reporting either physical or verbal aggression will have significantly higher percentages in the clinical ranges of anxiety and depression in comparison with recruits not reporting aggression.
2. Both childhood physical and verbal aggression will be statistically significant in terms of predicting clinical anxiety and depression among participants.

METHODOLOGY

Design and Subjects

This thesis is part of a larger parent study, the Survey of Recruit Behaviors, conducted by the Naval Health Research Center (NHRC), San Diego, California. The parent study examined Navy recruit behaviors on gender-integrated units at the Recruit Training Command (RTC), Great Lakes, Illinois, over a 13-month period from June 1996 to June 1997. The study used a 2-year combined retrospective and prospective longitudinal design with surveys at baseline, 6, 12 and 24 months. All of the participants filled out the survey anonymously. The retrospective component assessed reports of childhood experiences among recruits in their first week of basic training. The prospective component involved repeated follow-up surveys conducted among a randomly selected 50% of those who completed the baseline survey. These randomly selected participants were asked to participate in the longitudinal portion of the study and to provide their social security numbers on the surveys. In order to protect the recruits' security, the social security numbers were on tear-off sheets that were processed separately from the responses and could only be matched by co-researchers at Northern Illinois University (NIU). The present thesis uses baseline survey information from those selected to participate in the longitudinal follow-up surveys. It does not use the follow-up data collected in the prospective portion of the parent study. The sampling design and percentages of recruits responding to the survey are shown in Figure 1. As this figure indicates, 12,906 young adults from the gender-integrated units were invited to participate in the survey over the 13-month period.

Figure 1. Participation Rates for the Initial Survey of Recruit Behaviors



[a] Due to variable factors such as health issues and special testing or training requirements, not all recruits from the invited units were available to participate in the survey.
[b] There were 9 women and 2 men who returned questionnaires but were not included in the participant totals here because they did not provide correct identifying information.

PROCEDURE

All Navy units that integrated both male and female recruits were surveyed at the RTC from June 1996 to June 1997. Therefore, this sample may be considered representative of all Navy recruits during a 1-year period. During their first week of training, all recruits were invited to participate in the Survey of Recruit Behaviors conducted by the NHRC. A research assistant read a description of the study. Those who agreed to participate signed an Informed Consent Form and received a Privacy Act statement describing the study and the procedures used to ensure anonymity. Before administering the survey, participants were told they did not have to answer any portion of the survey if they were not comfortable doing so. They also were offered professional counseling in the event that their participation was upsetting or stressful. The Committee for Protection of Human Subjects at the Naval Health Research Center approved these procedures.

MEASURES

Conflict Tactics Scales-Parent Child (CTS-PC)

The independent variables examined in the current study are childhood psychological maltreatment (verbal/symbolic aggression) and childhood physical aggression. These variables were measured using the Conflict Tactics Scales-Parent Child (CTS-PC), Version II (Straus, 1990a). The CTS-PC, form R, includes 19 items representing conflict resolution strategies that adults might use with children. In its original format, respondents indicated whether each tactic was used in the last year, and if so, they indicated on a 6-point scale how many times it was used. The items on the CTS-PC are ordered such that higher numbered conflict strategies represent increasing levels of abusive tactics. The measure can also be broken down into 5 subscales representing "Reasoning," "Verbal Aggression," "Minor Physical Aggression," "Severe Physical Aggression," and "Very Severe Physical Aggression."

Some changes were made in the CTS-PC for the Survey of Recruit Behaviors. For example, rather than answering the items for the previous year, respondents were to answer regarding the "worst year of their childhood." The introduction to the CTS-PC questions was worded in this way in the survey: "No matter how well a family gets along, there are times when parents and children disagree, parents get annoyed with children, or have spats or fights because they're in a bad mood or tired or for some other reason. Parents and children use many different ways of trying to settle differences between them. The following is a list of things that your parents or stepparents might have done when you had a dispute. Please mark the number that most accurately describes your parents' or stepparents' reaction to you during the worst year of your life before age 18."

Responses were recorded on a 7-point Likert-type scale, ranging from 0 (Never) to 20+ (Very Often), the 6 questions used to measure Parent Child Verbal Aggression were: (1) Insulted or swore at you?; (2) Sulked and/or refused to talk about an issue?; (3) Stomped out of the room, house, or yard?;

(4) Did or said something to spite you?; (5) Threatened to hit or throw something at you?; and (6) Threw, or smashed, or hit, or kicked something?

The 11 questions used to measure Parent-to-Child Physical Aggression were (1) Threw something at you?; (2) Pushed, grabbed, or shoved you?; (3) Slapped or spanked you?; (4) Kicked, bit, or hit you with a fist?; (5) Hit or tried to hit you with something?; (6) Beat you up?; (7) Choked you? (8) Burned or scalded you?; (9) Threatened you with a knife or a gun?; and (10) Used a knife or fired a gun?

When originally testing the CTS-PC scales, internal reliability alphas of .77 for Childhood Verbal Aggression and .62 for Childhood Physical Aggression were reported. Concurrent validity was classified as moderate, and construct validity was strong, for both scales (Straus, 1990b).

For the current report, the continuous CTS-PC variables were recoded into two dichotomous variables. The dichotomous variable of Childhood Verbal Aggression reflects "any childhood verbal aggression," which is based on responses on the CTS-PC Verbal Aggression Scale (questions 1-6). Participants were considered to have experienced verbal aggression if they reported one or more instances of any tactic in questions 1-6. The physical aggression variable reflects "any childhood physical aggression" which is based on responses on the CTS-PC Physical Aggression Scale (questions 1-10 above). Participants were considered to have experienced physical aggression if they reported one or more instances of any tactic in questions 1-10. Neither frequency nor level of aggression was considered for this report. For both the CTS-PC physical and emotional aggression scales, data were considered missing if participants had failed to respond to 10% or more of the questions in each scale.

Trauma Symptom Inventory

The dependent variables - anxiety and depression symptoms in adulthood - were measured using the Trauma Symptom Inventory (TSI) (Briere, 1995). The TSI has 100 items and assesses a wide range of psychological symptoms. The TSI consists of 3 validity scales and 10 clinical scales. These include, but are not limited to, symptoms normally associated with PTSD and Acute Stress Disorder. All of the scales on the TSI are computed by summing across responses to specific subsets of items. Based on the standard deviations and means of a normative sample for the TSI, raw scores on each scale can be converted to T scores.

Responses for the clinical scales are measured by using a 4-point Likert-type scale, based on frequency of occurrence from 0 (Never) to 3 (Often). There are 8 items that define symptoms in the Anxious Arousal subscale: (1) Periods of trembling or shaking, (2) Feeling tense or "on edge", (3) Worrying about things, (4) Feeling jumpy; (5) High anxiety, (6) Nervousness, (7) Being startled or frightened by sudden noises, and (8) Feeling afraid you might die or be injured. Using the same 4-point scale of frequency, the subscale of Depression consisted of 8 items: (1) Sadness, (2) Wanting to cry, (3) Feeling depressed, (4) Wishing you were dead, (5) Feeling hopeless, (6) Feeling like life wasn't worth living, (7) Feeling so depressed that you avoided people, and (8) Feeling worthless.

The 10 clinical scales have proved internally consistent across diverse populations with reliability alpha coefficients ranging from .74 and .91 (M = .86). The ten scales also exhibit reasonable convergent, predictive, and incremental validity (Briere, 1995). For the current report, the TSI variables of Anxious Arousal and Depression were recoded into dichotomous variables that reflect the TSI clinical cutoff scores (T scores >65, with a mean T score = 50 for both anxiety and depression). Since the TSI was originally developed to be used in a clinical setting, scores that are above the cutoff are considered clinically significant.

For both the TSI Anxious Arousal and Depression scales, data were considered missing if participants had failed to respond to 10% or more of the questions in each scale.

Child Sexual Abuse Before 18th Birthday

This variable is from a single item created in-house for the Survey of Recruit Behaviors. The question on the beginning of the survey states "Before the age of 18, were you ever sexually abused?" Response choices were "yes" or "no." This variable may be considered a subjective item, however, it was used in the analyses as a control variable and not an analytical variable.

DATA ANALYSIS

Comparisons were conducted to explore possible differences between the anonymous and identified cohort data. Only one significant difference was found for the variable of academic degree. A slightly higher percentage of anonymous recruits reported some college experience when compared with the identified recruits (6.3% vs. 4.4%), χ^2 (6, N = 11,164) = 21.36, $p < .01$, w=.04). No significant differences were found between data sets for the variables of childhood physical or verbal aggression, nor for anxiety or depression. Only the identified data set was used for this study. For the current thesis, identified male and female participants were compared using Chi-square analyses in terms of age, education, ethnicity, marital status, and family income.

Next, based on the CTS and the TSI, 4 variables were created identifying (1) participants who reported any childhood verbal aggression, (2) participants who reported any childhood physical aggression, (3) participants who scored in the clinical anxiety range, and (4) participants who scored in the clinical depression range. A correlation matrix was obtained for childhood verbal aggression, childhood physical aggression, clinical anxiety and clinical depression. All correlations in the matrix were below r = .7 level; clinical anxiety and depression: r = .46, verbal and physical aggression: r = .37. Therefore the variables appear to measure separate constructs.

Descriptive data are presented and chi-square comparisons were made for these 4 dichotomous variables in relation to 10 selected demographic and family characteristics. These were gender, ethnicity, family income, education, marital status, parental divorce status, maternal military experience, paternal military experience, age at parent's divorce and parental strictness. The results are presented in the appendices for general information. All statistically significant relationships between these key study variables and demographic characteristics were small ($w < .1$). Childhood physical aggression was related to ethnicity, χ^2 (6, N = 4337)=17.37, $p < .01$, w =.05; paternal military service, χ^2 (1, N = 4136)=10.84, $p < .01$, w = .04; and parental strictness, χ^2 (4, N = 4359)=33.65, $p <$ .01, w =.08. Four variables were significantly related to childhood verbal aggression: ethnicity, χ^2 (5, N = 4336)=18.83, $p <$ .01, w =.06; parental divorce status, χ^2 (3, N = 4378)=16.77, $p < .01$, w = .06; recruit education, χ^2 (4, N =4397)=15.63, $p < .01$, w=.05; and marital status, χ^2 (5, N = 4136)=10.84, $p < .01$, w = .04). Scoring in the clinical depression range was significantly related to gender, χ^2 (N = 4532)=8.59, $p < .01$, w =.04; paternal military service, χ^2 (1, N = 4251)=10.81, $p < .01$, w =.05); recruit education, χ^2 (4, N = 4524)=13.41, $p < .01$, w =.007); and parental strictness, χ^2 (4, N = 4484)=26.02, $p < .01$, w = .03). No variables were significantly related to clinical anxiety. Despite the small effect sizes, ethnicity, education, and family income were chosen (and gender and sexual abuse) as control variables for the logistic regressions because they were of principal interest to the study.

To test the primary hypotheses of this thesis, cross-tabulations were conducted and chi-squares were obtained by gender for each of the independent variables; childhood physical aggression and verbal aggression, and the dependent variables; and clinical anxiety and clinical depression. Cross-tabulations were then conducted and odds ratios and chi-squares were obtained comparing the 4 primary variables in 2 x 2 tables to examine percentages of those reporting aggression versus those reporting no aggression. To produce the 2 x 2 tables needed for odds ratios, each gender was selected out individually, and odds ratios were obtained for each gender and aggression type (aggression vs. no aggression for physical and verbal aggression individually) by each symptom (anxiety and depression) separately. Sexual abuse was selected out and removed from the model eliminating all those who said they had been sexually abused before the age of 18.

Lastly, hierarchical logistic regressions were performed to examine the impact of childhood physical and verbal aggression on recruits' clinical anxiety and depression scores. Six hierarchical logistic regressions were obtained to examine the relationship between childhood physical and verbal aggression and recruits scoring in clinical anxiety and depression ranges, while controlling for other variables. The control variables of ethnicity, family income, education, gender and sexual abuse were each categorical and each variable was assigned a reference group for comparison. The reference groups assigned were ethnicity--white, family income--low, education--no high school diploma or

general equivalency diploma (GED). Females were chosen as the reference group for gender and "no abuse" was chosen as the reference group for sexual abuse. The analytical variables of childhood physical and verbal aggression were entered into separate blocks of the hierarchical logistic regression in the first model of all recruits and control variables. Physical aggression was significant for clinical anxiety and depression regardless of whether verbal aggression was entered in the model . However, when verbal aggression was entered alone in the model, it was also significant for clinical anxiety and depression until physical aggression was added to the model, at which time verbal aggression was only significant for clinical depression. Therefore, physical aggression is not influenced by the presence of verbal aggression in the model, however the effect of verbal aggression on clinical anxiety is weakened by the presence of physical aggression in the model.

In the first 2 hierarchical logistic regressions, all recruits were included in the analyses. The next 4 regressions removed the control variable of gender and instead selected males and females separately for each analyses in order to see the impact of individual genders on clinical anxiety and depression scores. Two regressions were obtained for males, one for anxiety, one for depression, and the same was done for females. The "full model" for each regression table reflects the changes in the control variables in block 1, after the variables of physical and verbal aggression are entered in block 2.

The author considered that alternate methods of obtaining these gender differences existed, such as creating variables to measure interaction effects of gender on specific variables. However, due to the level of expertise of a Master's student, the decision of a more simplistic approach of analyzing genders individually was considered appropriate.

Due to the large sample size of this study, a significance level of $p < .01$ was employed for all analyses.

LIMITATIONS AND STRENGTHS

Several limitations of this study might be considered. A principle limitation of this study is that only the occurrence of aggression was examined. Creating the dichotomous variables of "any verbal aggression" and "any physical aggression" ruled out the possibility of including levels of frequency and intensity in the variables. Further, the frequency levels and degrees of intensity were beyond the degree of complexity desired in this report. However, measuring the frequency of aggression and levels of intensity may have revealed a more accurate account of childhood maltreatment. Knowing that children experienced some degree of aggression is vague when compared with knowing how frequently the aggression occurred and what level of severity was sustained. If a child was only mistreated once, for example, was spanked or called names, it may not compare to a child who was repeatedly beaten or verbally battered on many occasions. A future study might take these aggression characteristics into account. Also in this light, the broad category of "any aggression" may account for the very high percentages of reported rates for childhood physical (69%) and verbal aggression (86%) in the recruit survey. It may be plausible to speculate that most people have suffered at least one account of being yelled at or scorned by parents, therefore it may not be surprising that the percentages were so high among participants for verbal aggression.

Although it would be practically impossible to control for all possible confounding variables, very few were controlled for in this report due to the nature of the study and the very small relationships between demographic and family variables and the 4 primary variables in this study. However, many other important variables were not considered that could have an impact on recruits' anxiety or depression levels other than childhood physical or verbal aggression (i.e. other traumatic life events, loss of loved ones, witnessing violence, bio-medical issues, genetic influences, or substance abuse).

Operationally defining the variable of emotional maltreatment was also a limitation. The literature review indicated that childhood psychological maltreatment consisted of emotional abuse and emotional neglect for which each contains several subcategories. This study used the CTS-PC verbal/symbolic aggression scale that does not address many of the other facets of psychological maltreatment commonly considered. Therefore, it is difficult to compare the current results with those

of other studies that examined psychological maltreatment with variables that represented broader definitions of the construct. Likewise, when comparing the TSI anxiety and depression subscales to the measures of the same constructs in other studies, there are discrepancies. The author chose the stringent clinical cutoff scores (created by the TSI) for anxiety and depression in order to examine the recruits whose scores reflected more serious symptoms compared with those who scored below the clinical cutoff. Although it is not possible to clinically diagnose these disorders through a survey, it was the intention of the author to isolate those cases with clinically significant anxiety and depression. This decision, however, resulted in a lower percentage of cases (6-8%) categorized as symptomatic whereas approximately 92% of recruits reported experiencing some degree of symptoms before the cutoff.

A further limitation may be that the variable of "sexual abuse before the age of 18" was not restricted to only parents as perpetrators, though the variables measuring childhood physical and verbal aggression were based on parental behaviors only. Also, the sexual abuse variable may be considered a more subjective measure since it is a single item in the survey and is not the result of a cumulative scale as were physical and verbal aggression. However, the sexual abuse variable was used as a control variable in the analyses and not an analytical variable.

The psychological state of young men and women 2 weeks before they enter into a commitment with the military might also be examined. It is possible that levels of anxiety and depression might be artificially high since recruits were subject to increased stress brought on by a major life change. Anxiety levels could be higher due to leaving home, moving far away from the family, and starting a new job and lifestyle. Depression levels might also be higher when a young man or woman is separated by time and distance from their respective partners, and/or from their parents, possibly for the first time. In a future study, perhaps asking recruits to report on behaviors 6 months before entering military service would be a better representation of their average psychological state. Those premilitary baselines could then be compared with the scores in the first week of military training, and again 6 months after training began.

Retrospective studies may often be problematic with regard to recalling childhood experiences. It is difficult to estimate the precision with which adults recollect their distant childhood, thus reliability and validity measurements may be inaccurate. In some of the literature reviewed, studies were based on retrospective surveys whose respondents were 25-50 years old. However, the average age of the male and female Navy recruits in this study was 20 years. Therefore it may be a strength that the younger age of the cohort serves to decrease such inaccuracies by having a shorter span of years to recall.

The literature reviewed also suggested a gender bias in the populations used for previous studies. Most of the studies that examined these forms of aggression consisted of women only. Therefore, exploring gender differences in the current sample is an advantage although it may not be accurate to compare the current mixed gender results with other studies.

RESULTS

Introduction

This chapter presents the results of analyses addressing the main research questions and hypotheses for the study. These results will be preceded by a table describing the study cohort's demographic characteristics of principle interest to the study. Where appropriate, findings will be displayed for males and females separately as well as for the total cohort. This is done because of the study's interest in gender differences.

Table 1 displays demographic information for the identified research participants by gender. The numbers of potential participants differ slightly for different variables due to missing data. The majority of recruits were high school graduates (84.8%), with a mean age of 19.7 years, single (89%), Caucasian (60.3%), and distributed evenly across three income categories. Demographic differences between the male and female participants were assessed. Statistically significant differences were found between men and women on all demographic variables in Table 1 except age. Women were somewhat more educated than men (94.1% vs. 90.8% were high school graduates or greater). Slightly more men than women reported that they were single. Finally, men more often reported that their parents' income was $50,000 or more per year, while women reported somewhat more frequently that it was $25,000 or less.

Table 1
Demographic Characteristics of the Participants

	Females ($N = 2573$)	Males ($N = 2925$)	Total ($N = 5498$)
Age (mean years)	19.7 (SD = 2.65)	19.7 (SD = 2.47)	19.7 (SD = 2.56)
Education $\chi^2_{(1, 5498)} = 22.9$*	($N = 2564$)[1]	($N = 2920$)	($N = 5484$)
Non high school graduate	5.9%	9.2%	7.5%
High school graduate	85.9%	83.6%	84.8%
College/technical training	8.2%	7.2%	7.7%
Ethnicity $\chi^2_{(1, 5401)} = 58.8$*	($N = 2525$)	($N = 2876$)	($N = 5401$)
Black	24.2%	15.9%	20.0%
Hispanic	11.0%	11.6%	11.3%
White	56.7%	63.9%	60.3%
Other	8.1%	8.6%	8.4%
Marital status $\chi^2_{(2, 5329)} = 29.65$*	($N = 2512$)	($N = 2817$)	($N = 5329$)
Single	88.8%	90.9%	89.8%
Married/cohabiting	9.1%	8.1%	8.6%
Divorced/separated	2.1%	1.0%	1.5%
Family income $\chi^2_{(1, 5359)} = 60.9$*	($N = 2510$)	($N = 2849$)	($N = 5359$)
Less than $25,000	39.9%	31.9%	35.9%
$25,000 - $49,999	38.2%	37.7%	37.6%
$50,000 or more	21.9%	30.4%	26.1%

*$p < .01$
[1] Separate N's are shown for variables with missing data

Table 2 addresses the rates of childhood physical and verbal aggression for males and females, as well as for clinical ranges of anxiety and depression. It displays the recruits' frequencies and chi-squares obtained for all 4 groups by gender, the two independent variables of childhood physical and verbal aggression and the 2 dependent variables of clinical ranging anxiety and depression scores. Of the 4 variables, only clinical anxiety was significant for differences between males and females. Males

and females reported high and very similar rates of childhood physical aggression (69.2% vs. 68.9%). Reported rates for childhood verbal aggression were also high and similar for males and females (85% vs. 87.4%). The overall percentage of recruits who scored above the cutoff for clinical anxiety was 6% (5% males and 7% females), which is the only significant finding. The percentage of recruits who scored above the cutoff for clinical depression was an average of 8%, with males 1.3% above females.

Table 2
Percentages Reporting Physical and Verbal Aggression and Clinical Ranges of Anxiety and Depression

Variable	Chi-Square	Males	Females	Total
Childhood physical aggression	$\chi^2_{(1, 5122) = .08}$	69.2%	68.9%	69.1%
Childhood verbal aggression	$\chi^2_{(1, 5122) = .5.4}$	85.0%	87.4%	86.2%
Clinical anxiety range	$\chi^2_{(1, 5199) = 9.35*}$	5.0%	7.0%	6.0%
Clinical depression range	$\chi^2_{(1, 5279) = 2.9}$	8.6%	7.3%	8.0%

*$p < .01$

Table 3 examines the first hypothesis that recruits reporting either physical or verbal aggression will have significantly higher percentages in the clinical ranges of anxiety and depression when compared with recruits not reporting any aggression. Chi-squares and odds ratios were obtained on the differences between those who reported aggression and those who did not report aggression. All results were statistically significant, which supports the first hypothesis. Those women who reported physical aggression were more than 2.5 times more likely to score in the clinical depression range than those women did not report physical aggression. Men who reported physical aggression were over 1.5 times as likely to score in the clinical depression range than men who did not report physical aggression. Anxiety scores indicated that women who experienced physical aggression were more than 2.5 times more likely to score in the clinical anxiety range than those women who did not report physical aggression. Men who reported physical aggression were over 2 times more likely to score in the clinical anxiety range than men who had not experienced physical aggression. Verbal aggression revealed that women who reported verbal aggression were more 8.5 times more likely to score in the clinical depression range than women who did not report verbal aggression. Men were nearly twice as likely to score in the clinical depression range when reporting verbal aggression as opposed to men who did not report verbal aggression. For anxiety, women were more than 4 times more likely to score in the clinical anxiety range when having reported verbal aggression than women who did not report verbal aggression. Men were over 2 times more likely to score in the clinical anxiety range when having reported verbal aggression than men who did not report verbal aggression.

Table 3

Bivariate Relationship of Clinical Ranges of Anxiety and Depression and Reported Physical or Verbal Parental Aggression

Symptom	OR	% in Clinical range	
		Aggression reported	No aggression reported
	Physical		
Depression			
Women $\chi^2_{(1, 1751)} = 14.99$*	2.81 (CI = 1.63 - 4.85)	7.1%	2.7%
Men $\chi^2_{(1, 2567)} = 9.32$*	1.69 (CI = 1.20 - 2.38)	9.2%	5.6%
Anxiety			
Women $\chi^2_{(1, 1754)} = 13.95$*	2.65 (CI = 1.56 - 4.52)	7.2%	2.8%
Men $\chi^2_{(1, 2573)} = 10.51$*	2.13 (CI = 1.33 - 3.41)	5.7%	2.8%
	Verbal		
Depression			
Women $\chi^2_{(1, 1746)} = 13.03$*	8.64 (CI = 2.11 - 35.31)	6.4%	.8%
Men $\chi^2_{(1, 2570)} = 6.98$*	1.93 (CI = 1.17 - 3.17)	8.6%	4.7%
Anxiety			
Women $\chi^2_{(1, 1748)} = 9.51$*	4.30 (CI = 1.56 - 11.81)	6.4%	1.6%
Men $\chi^2_{(1, 2578)} = 5.89$*	2.29 (CI = 1.15 - 4.55)	5.2%	2.3%

OR = odds ratio.
Clinical range = Above Briere's (1995) TSI cutoff score.
*$p < .01$.

Table 4 presents the results of a hierarchical logistic regression that included all recruits and predicts scoring in the clinical ranges of anxiety. This is the first of 2 tables addressing the second hypothesis which states that both childhood physical and verbal aggression will be statistically significant in terms of predicting clinical anxiety and depression among participants. In this regression, the control variables of ethnicity, education, family income, gender, and sexual abuse were all entered simultaneously in block 1. The variables of verbal and physical aggression were entered together in block 2, and the full model presents the results of the control variables after the aggression variables were entered. The statistically significant control variables in block 1 related to clinical anxiety scores were race/ethnicity, family income, and sexual abuse. Whites were 1.85 times more

likely to report clinical anxiety than Hispanics. Those from low-income families were 1.81 times more likely to score in the clinical anxiety range than recruits from medium- and high-income families. Those who reported sexual abuse were 1.79 times more likely to report clinical anxiety scores than those not reporting sexual abuse. All significant control variables remained significant through the final block after physical and verbal aggression were entered in block 2. In block 2, physical aggression was significant and verbal aggression was nearly significant (99% confidence interval [CI], .99 - 4.19). Recruits reporting physical aggression were 1.88 times as likely to score in the clinical anxiety range. These results do not support the second hypothesis as only physical aggression was significant for predicting clinical anxiety.

Table 5 presents the results of a hierarchical logistic regression that included all recruits, and it predicts scoring in the clinical ranges of depression. Block 1 revealed that the control variables of family income, gender, and sexual abuse were statistically significant in relation to clinical depression. Recruits from low-income families were 1.47 times more likely than those from high-income families to score in the clinical depression range. With females as the reference group, males were 1.56 times more likely to score in the clinical depression range, which remained significant through the final block. Those participants reporting sexual abuse were 2.41 times more likely than participants not reporting sexual abuse to score in the clinical depression range, which decreased to 2.23 times in the final block but remained significant. Physical and verbal aggression were both significantly related to clinical depression in block 2; and those reporting verbal aggression were 1.79 times more likely to score in the clinical depression ranges, and reporters of physical aggression were 1.67 times more likely. These outcomes support the second hypothesis since verbal and physical aggression were both significant predictors of clinical depression.

Table 6 is the first of 4 tables presenting separate regression analyses for men and women in order to examine gender differences more closely. Table 6 presents the results of a hierarchical logistic regression predicting male recruits scoring in the clinical ranges of anxiety. The only statistically significant control variable in block 1 was family income. Males from low-income families were 1.81 times more likely to score in the clinical anxiety range than males from medium-income families, and 1.88 times more likely than males from high-income families. Family income remained significant through the final block. Block 2 indicated that physical aggression was statistically significant but verbal aggression was not. Males reporting physical aggression were twice as likely to score in the clinical anxiety range, where those reporting verbal aggression were 1.67 times as likely to report clinical anxiety scores. This outcome does not support the second hypothesis given that only physical aggression is a significant predictor of clinical anxiety for males.

Table 4

Hierarchical Logistic Regression of Physical and Verbal Aggression Predicting Scores in the Clinical Anxiety Range (All Recruits)

	Block 1			Full model		
Variable	B	OR	CI	B	Adj OR	CI
Demographics						
Race/ethnic (white[a])						
Black	-.40	.67	.43 - 1.05	-.43	.65	.41 - 1.02
Hispanic	-.61	.54	.30 - .99*	-.62	.54	.30 - .98*
Other	-.15	.86	.48 - 1.53	-.16	.85	.47 - 1.52
Education (no diploma[a])						
HS Diploma or GED	-.25	.77	.45 - 1.34	.24	.79	.45 - 1.37
Any college/tech sch	-.29	.75	.34 - 1.66	-.01	.94	.51 - 1.76
Family income (low[a])						
Med	-.47	.63	.43 - .91*	-.48	.61	.42 - .89*
High	-.47	.63	.41 - .96*	-.48	.62	.41 - .95*
Gender (females[a])						
Men	-.21	.81	.58 - 1.14	-.23	.79	.56 - 1.12
Sex. Abuse (no abuse[a])						
Abuse occurred	.58	1.79	1.19 - 2.69*	.49	1.63	1.08 - 2.46*

	Block 2		
Types of maltreatment	B	OR	CI
Physical aggression	.63	1.88	1.22 - 2.90*
Verbal aggression	.71	2.04	.99 - 4.19

B = beta, OR = odds ratio, CI = confidence interval
*Significant at $p < .01$ level.
[a] Reference group.
Clinical range = Above Briere's (1995) TSI cutoff score.

Table 5

Hierarchical Logistic Regression of Physical and Verbal Aggression Predicting Scores in the Clinical Depression Range (All Recruits)

	Block 1			Full model		
Variable	B	OR	CI	B	Adj OR	CI
Demographics						
Race/ethnic (white[a])						
Black	-.09	.91	.62 - 1.33	-.11	.89	.60 - 1.32
Hispanic	-.25	.78	.48 - 1.26	-.24	.79	.49 - 1.27
Other	.33	1.39	.89 - 2.18	-.33	1.40	.89 - 2.19
Education (no diploma[a])						
HS Diploma or GED	-.01	.99	.59 - 1.65	.00	1.00	.60 - 1.67
Any college/tech sch	.17	1.19	.60 - 2.35	.20	1.23	.61 - 2.43
Family Income (low[a])						
Med	-.24	.79	.57 - 1.08	.25	.78	.56 - 1.07
High	-.38	.68	.47 - .99*	-.39	.68	.47 - .98*
Gender (females[a])						
Males	.44	1.56	1.15 - 2.12*	.44	1.55	1.13 - 2.10*
Sex. Abuse (no abuse[a])						
Abuse occurred	.88	2.41	1.67 - 3.48*	.80	2.23	1.54 - 3.22*

	Block 2		
Types of maltreatment	B	OR	CI
Physical aggression	.51	1.67	1.16 - 2.42*
Verbal aggression	.58	1.79	1.01 - 3.19*

B = Beta, OR = odds ratio, CI = confidence interval
*Significant at $p < .01$ level.
[a] Reference group.
Clinical range = Above Briere's (1995) TSI cutoff score.

Table 7 presents the results of a hierarchical logistic regression predicting female recruits scoring in the clinical ranges of anxiety when having reported childhood physical or verbal aggression. In block 1, the control variables of race/ethnicity and sexual abuse were significant. White females were almost twice as likely as Black females to score in the clinical anxiety range, and the variable remained significant through the final block. Females reporting sexual abuse were 1.77 times more likely to score in the clinical anxiety range than females reporting no sexual abuse, which decreased to 1.60 times more likely after entering physical and verbal aggression in block 2. The final block shows that childhood physical aggression was significantly related to clinical anxiety for females although verbal aggression was not. However, females reporting verbal aggression were 2.56 times more likely to score in the clinical anxiety range whereas those reporting physical aggression were 1.82 times more likely. This outcome does not support the second hypothesis given that again only physical aggression is statistically significant for females and clinical anxiety whereas verbal aggression is not.

Table 8 presents the results of a hierarchical logistic regression predicting male recruits scoring in the clinical ranges of depression. Only the control variable of sexual abuse was statistically significant in block 1. Males who reported sexual abuse were 3.48 times more likely to score in the clinical depression range than those who reported no sexual abuse, which decreased slightly to 3.29 times but remained significant after entering physical and verbal aggression in block 2. Neither childhood physical nor verbal aggression was significantly related to clinical depression scores. Again, the second hypothesis is not supported seeing that neither physical nor verbal aggression was statistically significant when predicting clinical depression for males.

Table 6

Hierarchical Logistic Regression of Physical and Verbal Aggression Predicting Scores in the Clinical Anxiety Range by Gender (Males)

	Block 1			Full model		
Variable	B	OR	CI	B	Adj OR	CI
Demographics						
Race/ethnic (white[a])						
Black	-.05	.95	.48 - 1.85	-.07	.94	.48 - 1.83
Hispanic	-.48	.62	.26 - 1.44	-.44	.64	.27 - 1.52
Other	.08	1.08	.49 -2.41	.11	1.12	.50 - 2.50
Education (no diploma[a])						
HS diploma or GED	.10	1.10	.49 - 2.49	.09	1.09	.48 - 2.48
Any college/tech sch	.12	1.13	.36 - 3.56	.12	1.13	.36 - 3.56
Family income (low[a])						
Med	-.60	.55	.32 - .96*	-.59	.55	.31 - .96*

High	-.63	.53	.29 - .97*	-.63	.53	.29 - .97*
Sex. abuse (no abuse[a])						
Abuse occurred	.67	1.95	.79 - 4.80	.59	1.80	.72 - 4.45

	Block 2		
Types of maltreatment	B	OR	CI
Physical aggression	.68	1.99	1.02 - 3.87*
Verbal aggression	.51	1.67	.64 - 4.37

B = beta, OR = odds ratio, CI = confidence interval
*Significant at $p < .01$ level.
[a] Reference group.
Clinical range = Above Briere's (1995) TSI cutoff score.

Table 7

Hierarchical Logistic Regression of Physical and Verbal Aggression Predicting Scores in the Clinical Anxiety Range by Gender (females)

	Block 1			Full model		
Variable	B	OR	CI	B	Adj OR	CI
Demographics						
Race/ethnic (white[a])						
Black	-.67	.51	.28 - 94*	-.70	.50	.27 - .91*
Hispanic	-.74	.48	.20 -1.11	-.79	.45	.19 - 1.05
Other	-.38	.68	.29 - 1.60	-.43	.65	.28 - 1.53
Education (no diploma[a])						
HS diploma or GED	-.64	.53	.25 - 1.12	-.59	.55	.26 - 1.18
Any college/tech sch	-.75	.47	.15 - 1.43	-.67	.51	.17 - 1.56
Family income (low[a])						
Med	-.38	.68	.41 - 1.13	-.41	.66	.40 - 1.09
High	-.29	.74	.41 - 1.34	-.31	.73	.40 - 1.32
Sex. abuse (no abuse[a])						

Abuse occurred	.57	1.77	1.12 - 2.80*	.47	1.60	1.01 - 2.55*

	Block 2		
Types of maltreatment	B	OR	CI
Physical aggression	.60	1.82	1.03 - 3.24*
Verbal aggression	.94	2.56	.84 - 7.82

B = beta, OR = odds ratio, CI = confidence interval
*Significant at $p < .01$ level.
[a] Reference group.
Clinical range = Above Briere's (1995) TSI cutoff score

egression predicting female recruits
bles, only sexual abuse was
statistically significant in block 1. Females who reported sexual abuse were 2.08 times more likely to report clinical depression scores than those who reported no sexual abuse, which decreased to 1.87 times in the final block. In block 2, childhood physical aggression was statistically significant whereas verbal aggression was not. Again, this outcome does not support the second hypothesis since only physical aggression was statistically significant when predicting clinical depression for females.

Table 8

Hierarchical Logistic Regression of Physical and Verbal Aggression Predicting Scores in the Clinical Depression Range by Gender (Males)

	Block 1			Full model		
Variable	B	OR	CI	B	Adj OR	CI
Demographics						
Race/ethnic (white[a])						
Black	-.07	.94	.54 - 1.61	-.08	.93	.54 - 1.60
Hispanic	-.25	.78	.42 - 1.46	-.21	.81	.43 - 1.51
Other	.43	1.54	.87 - 2.75	.47	1.59	.89 - 2.84
Education (no diploma[a])						
HS diploma or GED	.26	1.30	.66 - 2.55	.26	1.30	.66 - 2.56
Any college/tech sch	.49	1.63	.66 - 3.97	.50	1.65	.67 - 4.04
Family Income (low[a])						
Med	-.13	.88	.57 - 1.35	-.13	.88	.57 - 1.35
High	-.38	.68	.42 - 1.11	-.38	.68	.42 - 1.11
Sex. Abuse (no abuse[a])						
Abuse occurred	1.25	3.48	1.84 - 6.57*	1.19	3.29	1.74 - 6.24*

	Block 2		
Types of maltreatment	B	OR	CI
Physical aggression	.45	1.56	.97 - 2.53
Verbal aggression	.42	1.53	.77 - 3.04

B = beta, OR = odds ratio, CI = confidence interval
*Significant at $p < .01$ level.
[a] Reference group.
Clinical range = Above Briere's (1995) TSI cutoff score.
Table 9

Hierarchical Logistic Regression of Physical and Verbal Aggression Predicting Scores in the Clinical Depression Range by Gender (females)

	Block 1			Full model		
Variable	B	OR	CI	B	Adj OR	CI
Demographics						
Race/ethnic (white[a])						
Black	-.16	.85	.49 - 1.47	-.19	.83	.48 - 1.44
Hispanic	-.27	.76	.36 - 1.62	-.32	.73	.34 - 1.54
Other	.20	1.22	.59 - 2.51	.15	1.16	.56 - 2.40
Education (no diploma[a])						
HS diploma or GED	-.44	.64	.29 - 1.43	-.40	.67	.30 - 1.50
Any college/tech sch	-.32	.73	.25 - 2.12	-.25	.78	.27 - 2.29
Family income (low[a])						
Med	-.39	.67	.41 - 1.10	-.43	.65	.40 - 1.06
High	-.36	.70	.39 - 1.26	-.38	.68	.38 - 1.23
Sex. Abuse (no abuse[a])						
Abuse occurred	.73	2.09	1.34 - 3.24*	.63	1.88	1.20 - 2.93*

		Block 2	
Types of maltreatment	B	OR	CI
Physical aggression	.64	1.89	1.06 - 3.37*
Verbal aggression	.99	2.68	.88 - 8.20

B = beta, OR = odds ratio, CI = confidence interval
*Significant at $p < .01$ level.
[a] Reference group.
Clinical range = Above Briere's (1995) TSI cutoff score.

Table 10 presents an overview of the effects of physical and verbal aggression on scoring in the clinical ranges with all recruits compared with separate genders. For scoring in the clinical anxiety range, physical aggression remained significant and unchanged throughout the analyses of all recruits

and also when analyzed by individual gender. Verbal aggression was not significant for all recruits nor when selected by gender when predicting clinical anxiety scores. For clinical depression, both physical and verbal aggression were significant when all recruits were analyzed, but neither form of aggression was significant for males when analyzed by gender, and only physical aggression was significant for females when analyzed separately.

Table 10

Multivariate Effects of Physical and Verbal Aggression on Scoring in Clinical Anxiety and Depression Ranges With All Recruits VS. With Separate Genders

	Clinical anxiety OR	CI	Clinical depression OR	CI
All recruits				
Physical aggression	1.88	1.22 - 2.90*	1.67	1.16 - 2.42*
Verbal aggression	2.04	.99 - 4.19	1.80	1.01 - 3.19*
Males only				
Physical aggression	1.99	1.02 - 3.87*	1.56	.97 - 2.53
Verbal aggression	1.67	.64 - 4.37	1.53	.77 - 3.04
Females only				
Physical aggression	1.82	1.02 - 3.24*	1.89	1.06 - 3.37*
Verbal aggression	2.56	.84 - 7.82	2.68	.88 - 8.20

B = beta, OR = odds ratio, CI = confidence interval

*Significant at $p < .01$ level.

[a] Reference group.

Clinical range = Above Briere's (1995) TSI cutoff score.

DISCUSSION

The results of the current study provide further evidence of the detrimental effects of parental physical and verbal aggression when directed toward children. The retrospective rates reported by recruits indicate that a large percentage of young men and women have experienced childhood aggression. An average of 69% of the recruits reported they had experienced some level of physical aggression by their parents and 86% reported parental verbal aggression. The literature review revealed that myriad effects can manifest from childhood physical and emotional maltreatment, including anxiety and depression, low self-esteem, physical aggression, poor inter-relationship skills, anger, and poor academic achievement. Therefore, these high percentages of childhood aggressions deserve attention with regard to current treatment and future prevention.

Table 2 indicates that females had higher percentages than males for childhood verbal aggression and clinical anxiety ranging scores, however males had slightly higher percentages for physical aggression and depression. The outcome concerning clinical anxiety was supported by a study that measured anxiety of male and female high school students and found that females also scored higher than males on the survey (Hishinuma, Miyamoto, Nishimura, & Nahulu, 2000). The current outcome is challenged by a study that found when analyzing a large cohort of adolescents,

physical aggression and depression were both reported at higher rates by females than males (Turner & Finkelhor, 1996).

The results of Table 3 support the first hypothesis. There were significantly higher percentages of participants with psychological symptoms among those who reported experiencing aggression versus those who did not report aggression. Recruits who reported childhood physical and verbal aggression had significantly higher percentages of clinical anxiety and depression scores for both genders than those who did not experience parental aggression in childhood. These outcomes are supported by the literature (Brassard et al., 1993; Duncan et al., 1996; Gross & Keller, 1992). The odds ratios when comparing women who reported verbal aggression with women who did not appeared larger than those for men. This might suggest a stronger relationship for women between verbal aggression and mental health outcomes. However, there were quite large confidence intervals for these odds ratios, indicating that these ratios may not be very accurately estimated. Further, when controlling for variables in the subsequent hierarchical logistic regressions, most of these larger effects were diminished. It would be beneficial for future studies to replicate these findings and explore possible gender differences in these relationships.

The second hypothesis stated that both childhood physical and verbal aggression uniquely contribute in predicting anxiety and depression in the clinical ranges. In logistic regression analysis, whether entering gender as a control variable or computing separate equations for men and women, physical aggression was significantly related to clinical anxiety. Verbal aggression approached significance in the multivariate analyses ($p < .02$) when conducted separately for men and women. Verbal aggression was only significant in the equation including all participants. Since the confidence intervals for the multivariate odds ratio for verbal aggression were still somewhat larger among women, it may be that dividing participants into two groups for analyses reduced the statistical power too much to reliably assess the importance of verbal aggression in the equations. The possibility that physical aggression alone uniquely predicts clinical anxiety is further challenged by studies that have found only childhood psychological maltreatment uniquely predicted later symptoms of anxiety and depression, whereas childhood physical maltreatment did not (Ferguson & Dacey, 1997; Gross & Keller, 1992; Kent & Waller, 1998).

Also of interest are the control variables that were related to clinical scores and how they changed when all recruits were analyzed versus individual genders. When all recruits were analyzed in the first regression for clinical anxiety, the variables of race/ethnicity, family income, and sexual abuse were significant. When analyzing genders separately, only family income was significant for males, and race/ethnicity and sexual abuse were significant for females. Therefore, it follows that males influenced the significance for family income when all recruits were analyzed, and females influenced the significance for race/ethnicity and sexual abuse. However, there is one interesting change in race/ethnicity. The variable Hispanic was significant compared with Whites when all recruits were analyzed; but Black females became significant compared with White females when genders were analyzed separately, and Hispanics were no longer significant. It is difficult to explain this occurrence. In both cases, Whites were more likely than Hispanics (1.85 times) and Blacks (1.96 times) to score in the clinical anxiety range. These outcomes are supported by a study that conducted an overview of the literature examining ethnicity and mental health issues in children of all ages. The study found that Blacks, Native Americans, and Hispanics were less likely than Whites to report or suffer from anxiety and depression (Samaan, 2000).

There is little in the literature that might explain the relationship of family income and clinical anxiety. However, one study examined the effects of socioeconomic status on male and female children's mental health and found increased rates of anxiety and depression for children living in poverty (i.e. <$10,000). The lowest category of income in the current study was <$25,000, but it is apparent that male participants who reported coming from lower income families were more likely to score in the clinical anxiety range than males from medium- and high-income families.

Lastly, sexual abuse was consistently a significant predictor of anxiety for females and for depression ranges among males and females. Some studies have suggested that there is a relationship between childhood sexual abuse and adult psychopathology, whereas other studies found no

significant relationship between the two (Briere & Runtz, 1988b; Kent & Waller, 1998). Rosen and Martin (1996) found a relationship between sexual abuse and anxiety for male and female personnel in their study of a military sample.

The overall outcomes of this study suggest that in a large cross-section of military recruits, high percentages of young adults reported childhood physical and verbal aggression. The results of hierarchical logistic regressions indicated a significant relationship between childhood physical and verbal aggression, and anxiety and depression in adulthood. Childhood physical aggression remains consistently significant in predicting anxiety scores for both males and females, and significant for predicting clinical depression scores for females only. Childhood verbal aggression is only significant for clinical depression when analyzing all recruits, but it is no longer significant when genders are analyzed separately.

These results fully support the first hypothesis given that both men and women who reported childhood physical and verbal aggression reported significantly higher rates of clinical anxiety and depression. The second hypothesis was partially supported when analyzing all recruits since both childhood physical and verbal aggression were significant predictors of clinical depression, but only physical aggression was significant in predicting clinical anxiety. However, when analyzing genders separately, the second hypothesis was not supported since only physical aggression was significant and verbal aggression was not.

The results of this study may be unique in that rarely has such a large cross-section of young men and women been surveyed regarding their experiences of physical and verbal aggression. It is interesting that the majority of participants reported these types of experiences. As broadly operationalized as it was, it is unlikely that all of the verbal and physical aggression identified by the CTS in this study should be classified as abuse. Lines were not drawn in the physical and verbal aggression scales to delineate where aggression ended and abuse began. Nonetheless, both types of aggression analyzed were clearly related to long-term mental health outcomes among participants. Furthermore, a survey of American parents found that 70% believed that yelling and swearing at children can damage them psychologically. However when surveyed, researchers found that most of the same parents still practiced such behaviors with their children (Daro, Abrahams, & Robson, 1988). This reveals an important inconsistency between the beliefs and behaviors of parents.

Although much progress has been made in the dissemination of knowledge and education of parenting skills in the social service setting, there exists ample room for improvement on a global basis. A continued effort needs to be made to share the focus of childhood sexual and physical maltreatment research with childhood psychological maltreatment. Despite retrospective and current surveys, it is difficult to estimate the amount of aggression that continues to occur in today's homes. Even more difficult is to ascertain the extent to which children are suffering from psychological maltreatment, considering that the signs are so often invisible until more serious consequences appear. The outcomes of this study suggest that high percentages of recruits' parents carried out physical and verbal aggression with their children. The results also suggest that practicing these forms of aggression toward children can contribute to later negative repercussions in adult mental functioning. Anxiety and depression that range beyond clinical cutoff scores, as found in this report, may impair healthy mental functioning. It is important to note that these are only two of the repercussions of childhood emotional and physical maltreatment. Many other resultant symptoms have been studied that also contribute to less-than-optimal functioning in adulthood.

Future studies would benefit from tracking recruits who reported higher rates of aggression and symptoms to see how they fare through marriage and relationships, child-rearing practices, and their military or other careers. Although the current study was based on military recruits' retrospective surveys, it did not necessarily imply or account for whether recruits had come from military families. Therefore, a future study that wishes to compare aggression rates between military and civilian families must target those within the U.S. population who grew up in military families in comparison with those with civilian backgrounds. To understand the full range of impact of childhood emotional aggression in particular, it would be highly beneficial for longitudinal studies to follow recruits closely through their third decade of life after entering the military, or when returning to civilian life. The

outcomes of this and such future studies could further inform health care systems to understand and educate military and civilian parents on child disciplinary practices, and potentially prevent further negative repercussions on many lives.

IMPLICATIONS FOR SOCIAL WORK

The implications of this study on the world of social work could be far-reaching. Learning to identify and correct negative parental practices is of utmost importance to social workers in any family setting. Many social workers may live and work in cities that have a large military population or may be working directly on military bases. In military or civilian settings, it would be vital for a social worker to be aware of the prevalence rates of negative child-rearing practices found in this study. A social worker might then recognize yelling and demeaning as salient correlates to later psychological symptoms, realize that often emotional maltreatment is accompanied by physical aggression, and act accordingly. As social workers are mandated by law to report child maltreatment, the results of a study such as this could alert a social worker that he or she needs to be equally attentive to signs of verbal aggression and emotional aggression when observing a family system.

It would be crucial for a social worker on a military base to consider the implications of recruits who have experienced different forms of childhood aggression and the potential for symptoms such as anxiety and depression. A social worker might consider the potential danger that may exist among military personnel suffering from severe anxious arousal or depressive symptoms while facing the many stresses of military life, including combat. These symptoms may be essential to recognize in military personnel considering that it is unlikely a person could perform up to rigorous standards when suffering from the myriad effects of depression and anxiety. The role of the social worker as educator in these circumstances could be critical in preventative and treatment strategies. The bottom-line implication for social workers as a result of this study would be to realize how fully more subtle forms of aggression can affect a child's functioning, and how often nonphysical child aggression may scar a child, without a hint of visible wounds.

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APPENDICES

DESCRIPTIVE DEMOGRAPHIC RESULTS

Table 1

Percentages of Participants Reporting Parental Physical Aggression within Demographic Groups

Category	*N*	*df*	χ^2	w	*Experienced aggression*
Ethnicity	4337	5	17.37*	.05	
Black	818				73.7%
American Indian	86				68.6%
Hispanic	483				65.4%
Asian	217				67.3%
White	2665				66.3%
Other	68				70.6%
Paternal military	4136	1	10.84*	.04	
Yes	2082				70.1%
No	2054				65.3%
Parental strictness	4359	4	33.65*	.08	
Not strict	126				56.3%
A little	338				63.6%
Somewhat	1389				64.7%
Strict	1656				68.5%
Very Strict	850				74.4%

*Significant at $p < .01$ level.
df = degrees of freedom.
χ^2 = Chi square.
w = effect size.
Only significant relationships are reported.

Table 2

Percentages of Participants Reporting Parental Verbal Aggression Within Demographic Groups

Category	*N*	*df*	χ^2	w	*Experienced Aggression*
Ethnicity	4336	5	18.83*	.06	
Black	820				82.1%
American Indian	86				73.4%
Hispanic	483				83.6%
Asian	213				81.7%
White	2666				87.1%
Other	68				83.8%
Parent's divorced	4378	3	16.77*	.06	
Yes	1765				87.7%
No	2112				83.9%
Don't know	88				83.0%
Never wed	413				81.4%
Recruit education	4397	4	15.63*	.05	
No degree	191				88.0%
GED	141				89.4
HS diploma	3730				85.5
Tech school	140				83.6
Any college	195				76.4
Recruit marital status	4389	5	19.43*	.05	
Single	3979				85.6%
Married	237				78.5%
Divorced	52				88.5%
Widowed	1				0
Cohabitate	113				91.2%
Separated	7				71.4%

(Table 2 cont.)

*Significant at $p < .01$ level.
df = degrees of freedom.
χ^2 = Chi square.
w = effect size.
Only significant relationships are reported.

Table 3

Percentages of Participants Scoring in Clinical Depression Range within Demographic

Category	*N*	*df*	χ^2	w	*% in Clinical range*
Gender	4532	1	8.59*	.04	
Male	2675				8.0%
Female	1857				5.8%
Paternal military	4251	1	10.81*	.05	
Yes	2132				8.4%
No	2119				5.8%
Recruit education	4524	4	13.41*	.007	
None	196				7.1 %
GED	146			9.6%	
HS diploma	3832				6.9%
Tech/trade school	146			13.7%	
Any college degree	204			4.4%	
Parental strictness	4484	4	26.02*	.03	
Not strict	126				16.7%
A little	347				8.6%
Somewhat	1423				6.7%
Strict	1716				5.8%
Very strict	872				8.5%

*Significant at $p < .01$ level.
df = degrees of freedom.
χ^2 = Chi square.
w = effect size.
Only significant relationships are reported.

No table is presented for scoring in the clinical anxiety range because no variables were significant.

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14. ABSTRACT (maximum 200 words)

This thesis explored Naval recruit self-reported childhood verbal and physical aggression and the possible relationship to anxiety and depression in adulthood. In a cohort of 11,195 Navy recruits entering the Navy between 1966 and 1997, measures of aggression found that an average of 69% of the recruit reported they had experienced some level of physical aggression by their parents and 86% reported parental verbal aggression. Measures of clinical anxiety and depression revealed that 6% of the recruits reported anxiety above the clinical cut-off and 8% reported clinical depression. Finally, significant relationships were found between childhood physical aggression and adult anxiety for all recruits. However, childhood physical aggression was significant in predicting clinical depression for females only. A significant relationship was found between childhood verbal aggression and clinical depression when analyzing all recruits, but no significance was found when genders were analyzed separately. The implications of these findings are discussed.

15. SUBJECT TERMS
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